

Fellowship Profile

IAEA PROGRAMS
AT ARGONNE NATIONAL LABORATORY

Radioisotopes & Radiation Technology

TRAINING SUMMARY

I am a research associate at the Institute for Nuclear and Energy Research in Brazil, where I lead the purification process laboratory. My work focuses on developing purification methods for radioisotopes such as Mo-99, I-131, and Lu-177, as well as producing radiopharmaceuticals like Lu-177 DOTA and I-131 MIBG. From October 7–11, 2024, I participated in an IAEA fellowship program, visiting Niowave Inc. in Lansing, MI, USA, to explore their innovative approaches to radioisotope production.

During the visit, I attended a presentation on Niowave's production processes and toured key facilities, including the Y-90 and Ac-225 production laboratories, the "cold chemistry" lab, and the electron accelerator facilities. Observing their infrastructure and engaging with multidisciplinary teams provided valuable insights into their operations, safety protocols, and equipment, particularly in Ac-225 separation and Ra-226 recovery processes. The tour highlighted their rigorous contamination control practices, such as the use of Tyvek suits, contamination surveys, and waste monitoring with HPGe detectors, which set a high operational standard.

WHATS NEXT?

Currently, my research focuses on the separation of Lu-177 and Yb-176 isotopes using column chromatography with specialized resins. While I did not participate in routine production, in-depth discussions with Niowave's operators offered critical knowledge on column operation, liquid transfers, and sample measurements, this information will be crucial for setting up the production structure in our laboratory in the coming years



“Participating in an IAEA program for the first time was a valuable experience. It was both technically and culturally enriching, allowing me to build friendly contacts and technical interactions for future work.”

Marcos Oliveira Damasceno- Brazil

October 7th to the 11th 2024

Hosted by: Niowave Inc